

# THE PRFZ SEZ!

The H.C.R.A. novice class is progressing fine with classes at the senior high school in Agawam each Thursday at 7:00 P.M.

The attendance has been fine by both the novices to be and the hams who have been assisting the instructors.

Art Zaverella has the first two lessons. Jeff Duquette the next two, Gerry Griffin the next two, Ollie Quist and Ed Foster the next one, Bob Gordon and Tom Barrett the next two, Art Zaverella the next one. At the last meeting/lesson all the instructors and there assistants will combine in a general get together and ffile with exams. This is the new approved ARRL course and it id being well received.

Plans are now in progress for code classes to upgrade Techs to Generals and theory for Novice to General.

WA1GZO

Ted Lockwood=prez

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## ZERO BFAT

issue 2

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H C R A		O F F I C E R S	
PRES.	Ted Lockwood	home 786-2464	office 786-3330
V. Pres.	Gary Potts	home 569-5277	work 568-5886
Sec.	Frank Pomeroy	home 569-5088	
Treas.	Dick Chase	home 592-4514	office 786-3330
B O A R D S		O F D I R E C T O R S	
Fd Stefanik	534-4685	Ollie Quist	739-7361
Gerry Griffin	567-0367	Ralph Kemp	653-2519 or 653-6097
Dick Stevens	267-5110	Art Zaverella	
Norm Forrest	782-2026	Bob Tippet	562-9447
Bruce Felper	567-7240	Steve Shore	567-7954

NEXT MEETING: NOVEMBER 5 8 P. M.  
Feeding Hills Congregational Church.

Our next meeting will have the excellent ARRL film "Moving Up To Amateur Radio". We will also have a battle of the rigs. On display for you to see and compare... Drake TR-4, Kenwood TS-520, Yaesu 101E, Atlas 210X,.... etc.

So remember the next HCRA meeting, Nov. 5 8PM. at the Feeding Hills Congregational Church.

Members-please let the HCRA board of directors and/or your officers know who you would like from the league (ARRL) to speak at the Jan. 7 HCRA meeting. All suggestions are welcome, and would be appreciated.

# ELECTRICAL ENGINEERING FOR THE LAYMAN BY GLENN ROBERTSON WALPVB

Ever read one of those articles in a ham magazine where you'd swear that it would take an electrical engineer to understand it? Well, in this and a series of other articles I hope to get some of what an EE knows over to you.

## B A S I C S

Once upon a time there was a well known person whose laws are as basic to an EE as Ohms law. This person is Gustav Robert Kirchhoff, a German university professor who lived in the 1800's. His famous laws are known as KIRCHHOFF'S LAWS. They are based on a little known law, "conservation of energy" that basically says, That energy does not just appear or disappear. All Kirchhoff did was just apply that law to electrical circuits. He said that voltages or currents do not just appear or disappear in circuits. Also adding all the voltages and voltage drops should equal zero. The same goes for current also. Its like starting at the base of a hill, and calling it zero, walking up the hill and coming down the hill again to the original zero level. In mathematical terms we have:

KVL (Kirchhoff's voltage law)  $V_1 + V_2 + V_3 + \dots + V_N = 0$

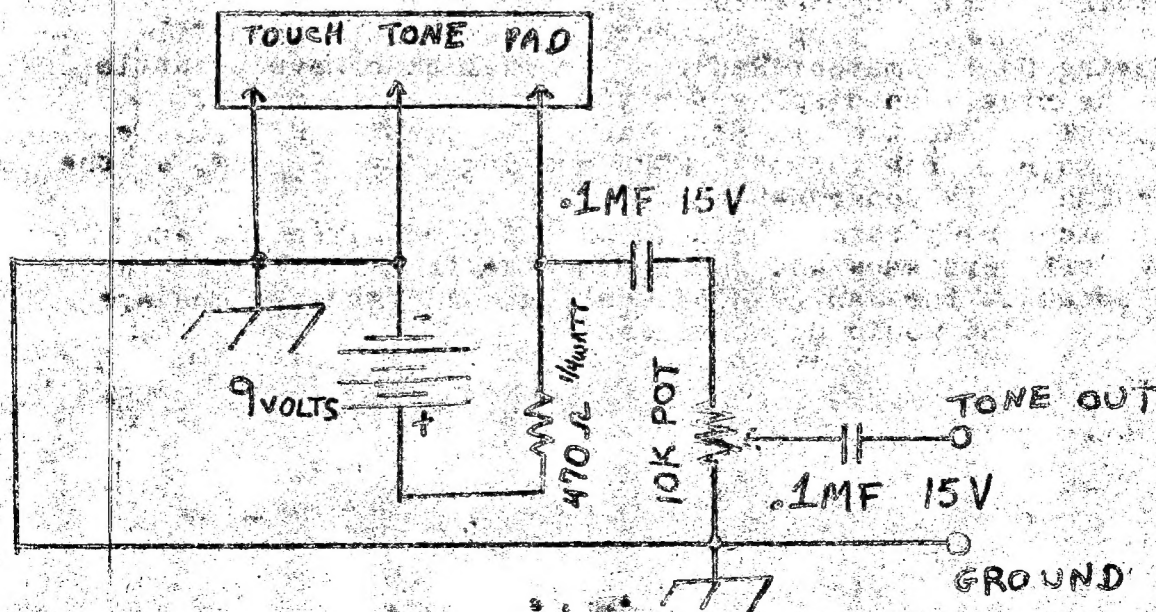
KCL (Kirchhoff's current law)  $I_1 + I_2 + I_3 + \dots + I_N = 0$

Now we can use these laws to solve circuits differently than before, to the final usage of the ominous impedance.

Note about the author: Glenn Robertson is an electrical engineering student in his second year at Worcester Polytechnic Institute, known for it's famous graduates like Art Zaverella, W1KK.

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Touch Tone Pad Connection  
approx 10K impedance  
Dick W1QWJ



## NOTICES

**HCRA NET:** Is meeting every Monday at 8 PM EST at 28.650 MHZ.

**Dues:** Dick Chase, WAIUYO will be glad to accept dues from all unpaid HCRA members for the 1976-77 year. Please have your \$5 for Dick at our November 5 meeting.

**ZERO BEAT** is now accepting commercial ads. For more info contact Bruce, WAIPOX, at 1-413-567-7240 or Steve, WAI7EV, at 1-413-567-7954.

Just a reminder that you can pay your ARRL dues through the HCRA. By doing this the club will get a cut and you will be getting your renewal at no extra cost. You won't even have to mail it.

Your ad or article could have appeared here. Personal ham ads are FREE. For more info on articles or to place a ad call Steve 567-7954 or Bruce at 567-7240.

**FLEA MARKET & AUCTION:** At the American Red Cross building in Farmington Conn. Sunday November 7 morning till nite.

**DX QSL'S:** Are you interested in your DX QSL card status? There are two nets to find out your card and envelope status. ~~These nets are the:~~ Western Mass. Emergency Net, which meets Sundays. AT 3.935 MHZ at 8:30 to 9:30 in the morning. The other net is the HCRA net which meets Monday evenings at 28.650 MHZ, from 8:00 to 9:00 PM. QSL bureau representatives check into these nets to help you out. TNX.

## H A M A D S

**FOR SALE:** RTTY station. ST-6 with AFSK, 170/850 shift \$200.  
28 KSR \$150. HX-10 with FSK \$150.  
SB600JX mint, broadcast thru 6 mtrs. \$300.  
Call Ed White WLNPL 592-0756.

**FOR SALE:** Off season special. Emerson air conditioner, 24000 BTU, 220 volts, used 2 summers. \$225.  
Call Jerry Griffin WAIPOGT 567-0367.

**FOR SALE:** 80-10 meter vertical antenna, with manual, in very good shape. Cheap, to a good home!  
Call Bruce Felper WAIPOX 567-7240.

**FOR SALE:** HW-202 with 6 pairs of xtals. \$180.00  
Call Steve WAI7EV 567-7954.



## H A M   A D S

**WANTED:** Minibeam in good condition.  
Call Don WALWXS 783-1839.

**FOR SALE:** Drake SPR-4 transistorized receiver with 23 xtals,  
noise blanker, xtal calibrator. Just back from  
the factory-realigned.  
Call Joe KLZOC 783-1867.

**FOR SALE:** Drake TR-4 with noise blanker and AC-4 power supply  
all for \$400.00  
Call Jerry WALPGT 567-0367.

**WANTED:** HELP FOR WIOU BUREAU. For more information on  
this worthwhile project call or write .  
Call Elenor Gray (Belchertown) 323-7374.

## G U Y   R O P E S

Olle KLHYL

All of us have had problems with guy lines and rope ties  
on long wires, etc. The rope just disintegrates after a certain  
period of time and the antenna comes down. **DISASTER!**

A long discussion recently with a representative of a  
leading manufacturer of rope came up with some facts:

**NATURAL FIBER ROPE** (hemp, cotton, jute) suffer greatly  
from the out door environment. (sun light, cold, heat, water)

**NYLON ROPE** Does very well with heat, cold and dampness,  
but gets layed low by ultra violet light and high stretch  
problems.

**POLY PROPALYNZ** Is about the same as the above but has  
a lower stretch factor.

**POLY ESTER** Is now the best bet. It has only moderate  
stretch. It has no reaction to heat and cold, or dampness,  
but excellent resistance to ultraviolet light. DuPont manufac-  
ters polyester rope under the name of DACRON, or look for the  
words polyester on the wrapper.

There is no advantage with braided rope over twisted as  
far as the life of the rope is concerned. Braided rope will  
run smoother over pulleys. You should make sure the core of  
the rope is also polyester, not cotton or glass fibers.  
Braided rope must be tied with knots. (Bowline is best knot  
for this purpose.) Twisted rope can be spliced to join two  
pieces on to form an eye etc.

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On October 18 there where 18 check ins to the HCRA net.  
So lets have some more check ins... HCRA NET 28.650 MHZ  
every Monday at 8 PM EST.

## H A M A D S

**WANTED:** Electronic keyer.  
Call Jeff WALSNJ 569-6739  
or bring the keyer in question to the Nov. 5 meeting.

**WANTED:** Heathkit HW-16.  
Call Larry 567-3444

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The pulse type interference on 20 meters, originating in the Soviet Union, has reared its head again, resulting in a number of complaints from amateurs and another telegram from the U.S. to the Soviet Union. If you are queried by this interference, ponder no longer. Everything possible within official and legal channels is being done to resolve the problem.

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Initial shipments of the 1977 Handbook will be made from the printer to dealers beginning the week of November 1, which is about two weeks earlier than last year.

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Lew McCoy, W1ICP, has been appointed organizer/moderator for the League's proposed program at ELFCTRO-77 in New York City next April. He is currently lining up speakers for the two sessions which we suggest-- "Antennas for Present-Day Applications" and "RFI-and-TVI-- Caused and Cures."

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The telecommunications Service Center of the U.S. Department of Commerce has announced that all of its activities will cease on September 30, 1976. The activities to be discontinued include ionospheric telecommunications forecasts and warnings distributed by announcement over radio station WWV, and by telephone, teletype, and weekly mailings. Telephone calls to the Telecommunications Service Center brought a variety of responses as to the amount of budget involved, but it is apparently somewhere between \$60,000 and \$150,000 that will be saved annually. I am sure that many of us are confident that similar economies are being effected in other areas of government. In the meantime, we are studying ways in which the ARRL can, in conjunction with a monthly propagation predictions column in QST and improved WIAW propagation bulletins, provide a replacement service, at a somewhat lower budget.

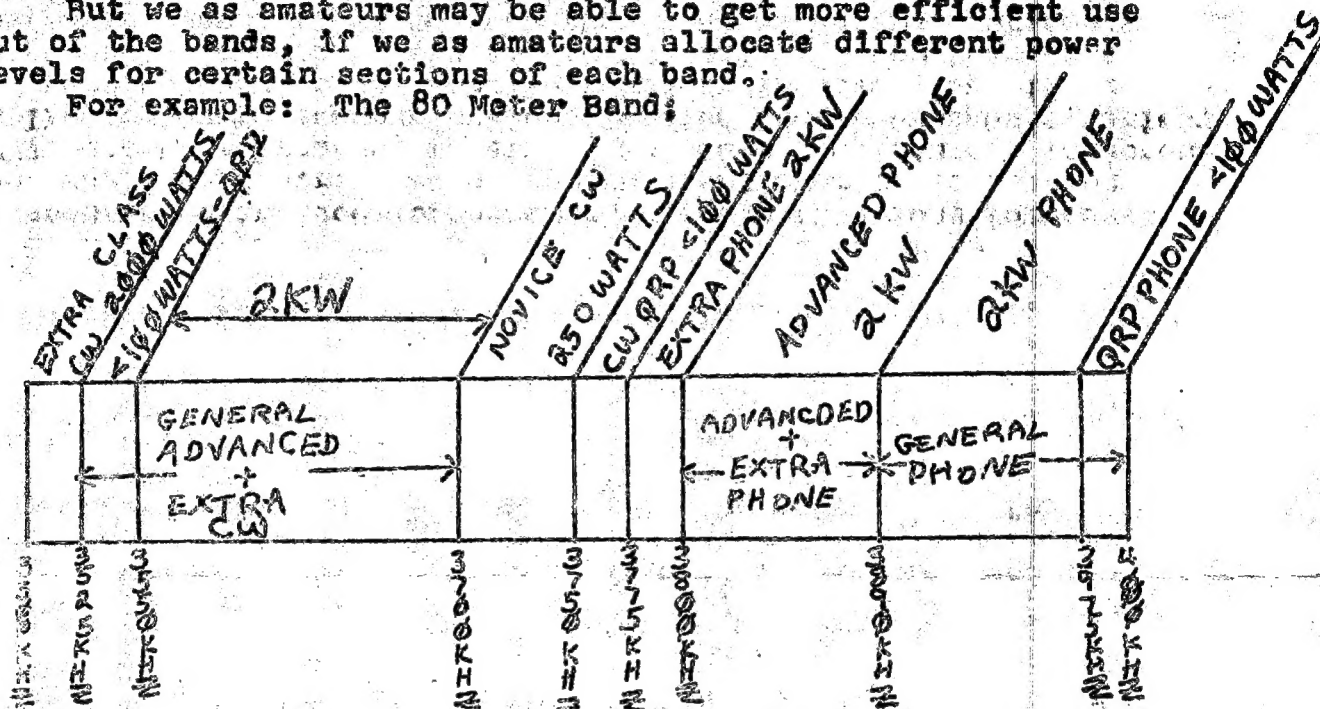
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## EDITORS CORNER

Ever have a QSO interrupted by some 2KW PEP station covering up your barefoot signal of 100 watts? Ever try running QRP only to get clobbered by a big 2KW signal, right after you start working some fantastic DX, with only a few watts? Now part of this problem can be attributed to the fact that the U.S. ham bands are a little bit overcrowded.

But we as amateurs may be able to get more efficient use out of the bands, if we as amateurs allocate different power levels for certain sections of each band.

For example: The 80 Meter Band;



All the bands could be allocated in a similar manner.

Again let me note: This is amateur controlled, not F.C.C. controlled. Also high power could be used for emergency or net operations.

I would like to note at this point that this idea was conveyed to me in a low power QSO with VE2DPX, that was QRM'd by a high powered station.

I hope those of you who have any feedback on this idea (be it positive or negative), will call or write me, or if possible get in touch with me on the HCRA net, (28.650 MHz Mondays at 8PM est).  
 TNX Bruce Felper W1P7X

The opinion expressed in the preceding editorial is that of the author, (Bruce Felper), and not that of ZERO BEAT or the HCRA. Equal time will be given to responsible opposing viewpoints.

Any written correspondence for ZERO BEAT should be mailed to: Bruce Felper, W1P7X  
 111 Academy Drive  
 Longmeadow, Mass. 01106

## **SOME MORE TIMERS**

Did you ever time out on a repeater or wonder how long you've been going while ragchewing? I presented a circuit in "Zero Beat" last year to aid the time unconscious operator. I will admit, the circuit may have been a bit difficult if you have never worked with IC's before and it cost about \$25.00 to construct.

If this may have stopped you, then I offer two alternatives to help you avoid a possible "pink slip" or a "round" depending on your mode of operation.

The pre-assembled and tested MA1001A and MA1002A clock modules made by National Semi-conductor and sold by Digi-Key for \$12.95 and \$13.95 respectively can be converted into a ten minute timer very simply. The price includes the MM5385 clock chip, 4 digit .5 inch readout, and all components (already assembled on a P.C. board), transformer and all push buttons and switches needed. The only thing needed besides the basic kit is a cabinet, on-off switch, A.C. cord, a 10K pot (if brightness control is desired) and about 10 points to solder.

Converting these clocks into a 10 minute timer is done by rewiring the push button switches. No modification is needed on the circuit board itself.

1. Jump the "seconds shift" push button so that it is always on.
2. Wire the fast and slow set points together on one side of another push button with Vss (ground) on the other side. This becomes the reset.

All other push button are not needed. Simple, accurate, easy to view with .5 inch read-outs and unaffected by R.F. because it is direct drive, not multiplexed.

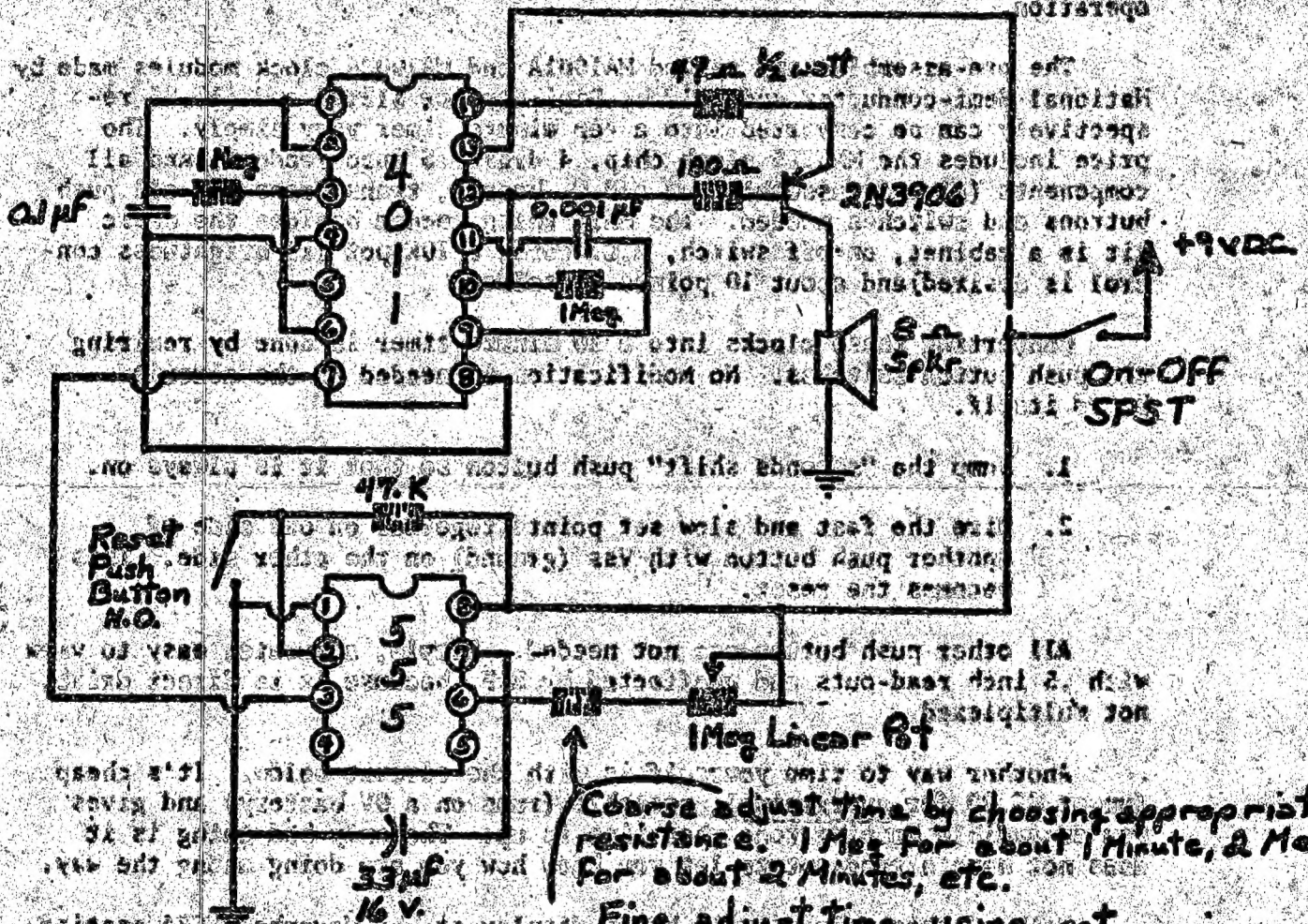
Another way to time yourself is with the circuit below. It's cheap (under \$5.00 for everything), portable (runs on a 9V battery) and gives you an audible beeping tone when time is up. The only bad thing is it does not have a read-out to let you know how you are doing along the way.

Both of these timers will be on display at the November HCRA meeting. Circuit boards, and any or all components are available from the author, Jerry Griffin WAIPGT.



Did you ever find out on a resistor or whether you have been going this way? I presented a circuit in "Tech Recs" last year to aid the time in setting up a circuit. I will admit, the circuit may have been a bit difficult if you have never worked with it before and it cost about \$25.00 to build.

If this may have stopped you, then I offer two alternatives to help you avoid a possible "pink slip" or a "round" depending on your mode of operation.



Coarse adjust time by choosing appropriate resistance. 1 Meg for about 1 Minute, 2 Meg for about 2 Minutes, etc.

Fine adjust time using pot.

All resistances are 1/4 watt except where noted.